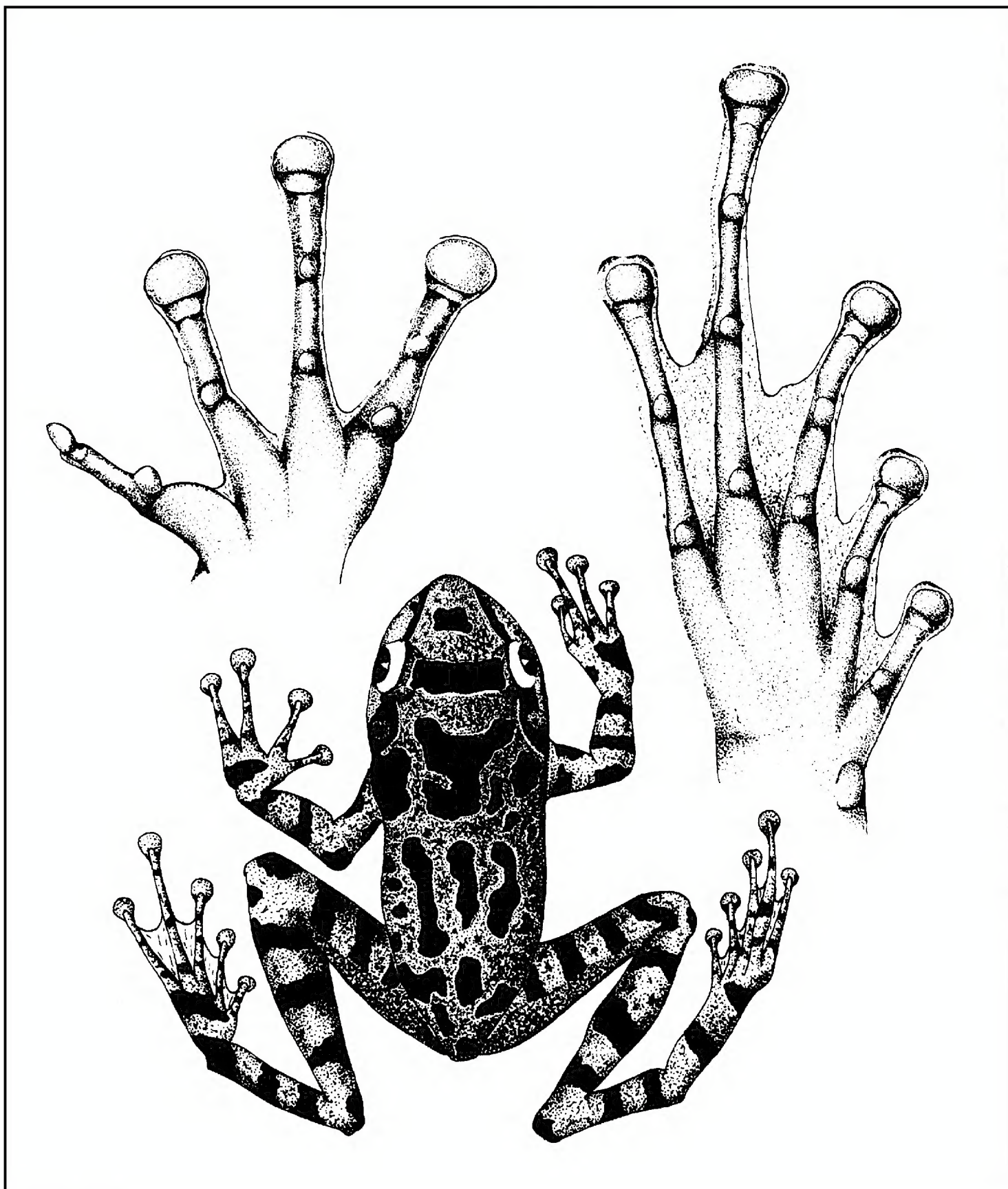

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Geographic Distribution of the Southeast Asian Turtles in the Genus *Malayemys* (Testudines: Bataguridae)

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Introduction

Members of the genus *Malayemys*, Malayan snail-eating turtles, are small batagurid turtles reaching maximum sizes of 22 cm carapace length (Srinarumol, 1995). They have dark brown to mahogany carapaces with three discontinuous keels, yellow plastra with large dark blotches on each scute, and large black heads adorned with yellow or cream-colored stripes that extend onto their necks (Ernst et al., 2000). *Malayemys* inhabit lowland freshwater habitats throughout Southeast Asia including ponds, canals, streams, swamps, marshes and wet rice fields. These are diurnal bottom dwellers that feed primarily on mollusks (Smith, 1931; Taylor, 1970; Nutaphand, 1979; Srinarumol, 1995; Ernst et al., 2000; van Dijk and Thirakhupt, in press). Populations of *Malayemys* can be found in virtually all lowland areas of central Thailand, where they are the most commonly found wild turtle (van Dijk and Thirakhupt, in press). Population status outside of central Thailand is poorly documented. Members of this genus are presumed to be abundant in southern Vietnam (Bourret, 1939; Geissler and Jungnickel, 1989; van Dijk and Thirakhupt, in press), less abundant in peninsular Thailand (van Dijk and Thirakhupt, in press), and rare on Java (van Dijk and Thirakhupt, in press; Peter C. H. Pritchard, pers. com.).

Many Southeast Asian turtle species are in rapid decline because of serious pressure from commercial exploitation and habitat destruction (Behler, 1997; Thirakhupt and van Dijk, 1997; van Dijk et al., 2000). Improved legislation and enforcement, community education, population monitoring, and life history studies are all crucial to the long-term survival of most of these species. None of this can occur, however, without detailed records on the geographic distribution of these organisms. This paper presents a detailed table and map that clearly define the geographic distribution of turtles in the genus *Malayemys*. No other account is based on such a complete compilation of data.

Methods and Materials

Brophy (2004) recently completed a detailed study of geographic variation in turtles from the genus *Malayemys* and argued for the existence of two distinct species: *M. subtrijuga* (Schlegel and Müller, 1844) from the Mekong River Basin of eastern Thailand, Laos, Cambodia, and southern Vietnam; and *M. macrocephala* (Gray, 1859) from the Chao Phraya and Mae Klong basins of central Thailand, the coastal areas of southeastern Thailand and Cambodia, and the Malay Peninsula in southern Thailand and northern Malaysia.

In the current paper, distribution data from available museum and literature records is used to clarify the geographic distributions of these two species. Information includes country and watershed of origin (watershed designations follow Kottelat, 1989), specific locality data (if available), latitude and longitude coordinates, museum catalog number, and/or literature reference(s). Comments on the distribution of these species are also provided below.

Museum abbreviations follow Leviton et al. (1985) and Leviton and Gibbs (1988) with the following additions: CRI = Chelonian Research Institute, Oviedo, Florida, USA; KUZ = Kyoto University Zoological Collection, Kyoto, Japan; RH = personal collection of Ren Hirayama, Teikyo Heisei University, Ichihara, Chiba, Japan; ZRC = Raffles Museum of Biodiversity Research, Zoological Reference Collection, The National University of Singapore, Singapore.

Results and Discussion

Based on data from available museum and literature records (Figure 1 and Table 1), specimens of the genus *Malayemys*

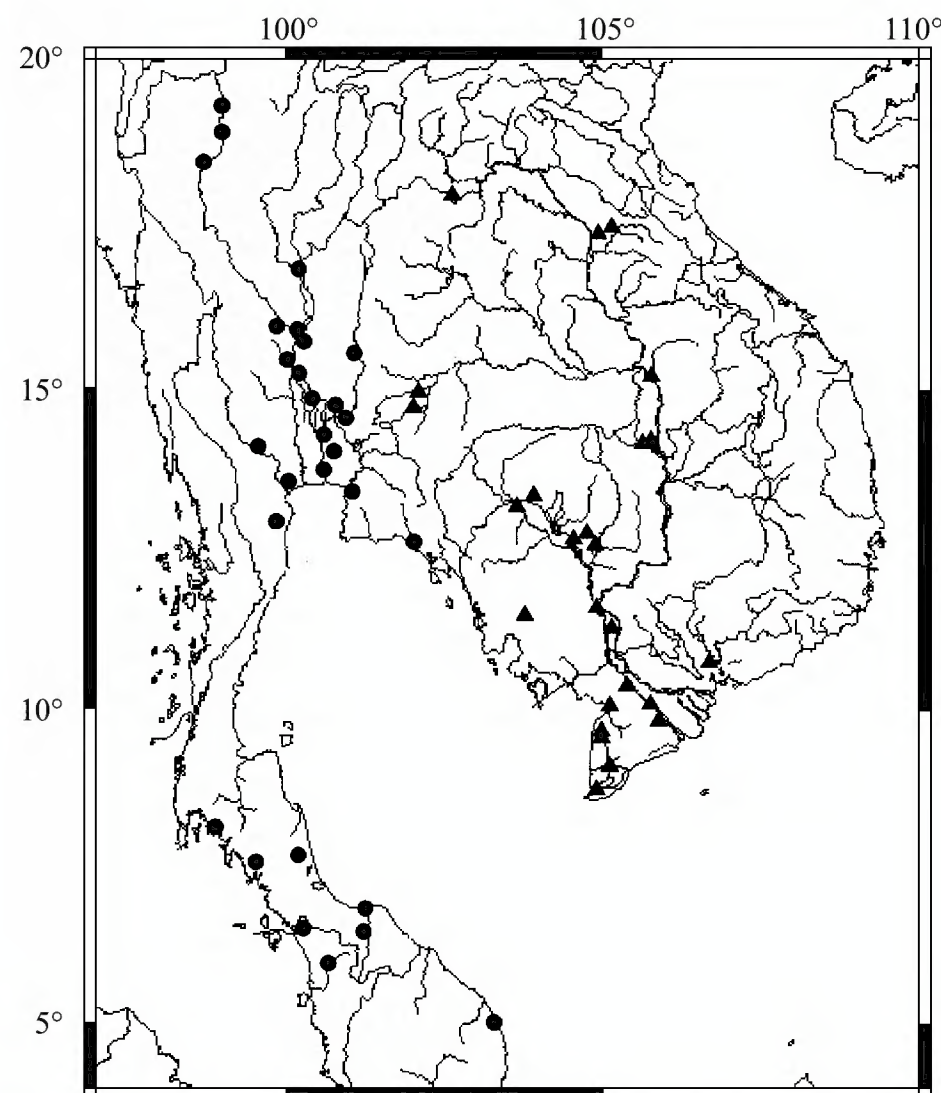


Figure 1. Distribution map for *Malayemys subtrijuga* (Schlegel and Müller, 1844) (triangles) and *Malayemys macrocephala* (Gray, 1859) (circles) based on available museum and literature records.

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have been found in the Chao Phraya and Mae Klong basins of Thailand; portions of the lower Mekong basin in eastern Thailand, Laos, Cambodia, and southern Vietnam; coastal areas of southeast Thailand; the Malay Peninsula in peninsular Thailand and northern Malaysia; the Greater Sundan islands of Java and Sumatra; and markets in southern China and northern Vietnam.

Records from the Chao Phraya and Mae Klong basins of Thailand are abundant. *Malayemys macrocephala* has been recorded in the Chao Phraya basin from Chon Buri and Bangkok in the south, Chiang Mai in the north, Kamphaeng Phet Province in western Thailand, Phetchabun Province in the eastern portion of the basin, and many areas in between. In the Mae Klong basin, *M. macrocephala* has been recorded from Kanchanaburi, Phetchaburi, Ratchaburi, and Samut Songkhram provinces.

Fewer records for *M. macrocephala* are known from other portions of its range. A single record exists for Laem Sing in the southeast coastal areas of Thailand. Records are known from the east coast *Melaleuca* swamps in Terengganu, Malaysia and from the northern Malaysian states of Kedah and Perlis. Several records also exist for peninsular Thailand including Krabi, Pattani, Phatthalung, Trang, and Yala.

Malayemys macrocephala may also occur in Myanmar. Platt et al. (2000) listed its status in Myanmar as “not yet recorded; possibly occurs in Tenasserim” [presently Tanintharyi Division]. More recently, Win Maung and Win Ko Ko (2002) recorded *Malayemys* as part of the Myanmar turtle fauna, and gave its range as “Tanintharyi Division, Mon State, Kayin State, Kayah State.” No specimens were referenced and no source was given for this information, so its accuracy cannot be determined. It seems entirely possible, however, that *M. macrocephala* does occur in Tanintharyi Division. This area is found in the Malay Peninsula “drainage basin” (Kottelat, 1989), just like several localities in peninsular Thailand and northern Malaysia for which there are confirmed records.

Records for *M. subtrijuga* from the Mekong basin are less abundant, but a substantial number still occur. *Malayemys subtrijuga* has been recorded from Amphoe Pak Thong Chai and Nakhon Ratchasima in the Thailand portion of the basin; Vientiane Municipality as well as Attapeu, Bolikhamxay, Champasak, Khammouane, Savannakhet, and Vientiane provinces in Laos; and Battambang, Kampong Chhnang, Kampong Thom, Kandal, Koh Kong, and Siem Reap provinces as well as Phnom Penh Municipality in Cambodia. Most records from the Mekong basin, however, come from southern Vietnam. *Malayemys subtrijuga* has been recorded from Ca Mau, Can Tho province, Ho Chi Minh City, Long Xuyen, Nam Can, Phung Hiep, Rach Gia, and the U Minh Region of Ca Mau and Rach Gia provinces.

Members of this genus have also been recorded from several places in Indonesia. There is a single record for *Malayemys* (species unknown) from Duri, Sumatra, and a few records (mixed species) from “Sumatra” only. These Sumatran records are most likely based on imported specimens or faulty locality data. Several herpetofaunal surveys have failed to

locate *Malayemys* on Sumatra (de Rooij, 1915; van de Bunt, 1990; Fritz and Gaulke, 1997; Gaulke et al., 1998; Shepherd, 2000) and current reptile dealers have little or no knowledge of their presence there (Shepherd, 2000). Brophy’s (2002, 2004) results suggest that Sumatran specimens are of mixed origin and were, therefore, likely introduced or mislabeled. A single record also exists for *Malayemys* (species unknown) from Borneo (Wetlands International Indonesia Program, Wetlands Database in Samedi and Iskandar, 2000). This record is questionable (Samedi and Iskandar, 2000) and, if legitimate, is probably based on imported specimens or a misidentification. I found no such museum specimens, and Lim and Das (1999) make no mention of the presence of *Malayemys* on Borneo.

Malayemys subtrijuga has been found on Java in Banten, Cirebon, Depok, Jakarta, Surabaya, and Tasikmalaya. The question as to its natural occurrence there, however, is a complex issue. *Malayemys subtrijuga* has been known from Java for almost 200 years (Temminck and Schlegel, 1834; Schlegel and Müller, 1844; Hoogmoed, 1982). In fact, the syntypes of *M. subtrijuga* (Schlegel and Müller, 1844) were collected in Java’s Bantam Province (Temminck and Schlegel, 1834; Schlegel and Müller, 1844; Hubrecht, 1881). There are several lines of evidence, however, that lead me to conclude that *M. subtrijuga* is not native to Java (Dammerman, 1929; Ernst et al., 2000; van Dijk and Thirakhupt, in press). First, recent reports indicate that populations of *M. subtrijuga* on Java are dwindling or extinct (Samedi and Iskandar, 2000; van Dijk and Thirakhupt, in press; Peter C. H. Pritchard, pers. com.). This may be due in part to the small size of introduced founding populations, but may also be due to extensive long-term habitat alteration on Java (Whitten et al., 1996; Manthey and Grossman, 1997; FAO, 2001; Peter Paul van Dijk, pers. com.). Second, history indicates that humans have been moving between Java and the Southeast Asian mainland for over two thousand years (Whitten et al., 1996; Schwartzberg and Bajpai, 1992). Since *M. subtrijuga* is commonly used for food (van Dijk and Palasuwan, 2000; van Dijk and Thirakhupt, in press) and religious practices (van Dijk and Palasuwan, 2000; Hendrie, 2000; van Dijk and Thirakhupt, in press) by non-Islamic peoples (Whitten et al., 1996), it is conceivable that it was brought to Java for one or both of these reasons. Third, the known distribution of *M. subtrijuga* on Java is primarily limited to port cities on the northern coast. This type of distribution is expected for an introduced species (Inger, 1966). Fourth, analyses of ancient river systems suggest that *M. subtrijuga* could not have reached Java from the Southeast Asian mainland without passing through either Borneo or Sumatra (Burridge, 1992; Lovich, 1994; Inger, 1999; Voris, 2000), and since it is not found on these islands, an introduced origin is possible. Finally, Brophy’s (2002, 2004) results suggest that *Malayemys* from Java are morphologically similar to those from the Mekong River Basin and were, therefore, possibly introduced primarily from that region.

It is also possible, however, that populations of *M. subtrijuga* on Java are Pleistocene relicts. One interesting zoogeographical feature of Southeast Asia is the correspondence between the monsoon East Javan and monsoon mainland Southeast Asian faunas in contrast to the fauna of the rainforest belt

(Thai-Malay Peninsula, Sumatra, and Borneo) (Peter Paul van Dijk, pers. com.). The Banteng (*Bos javanicus*), Javan rhinoceros (*Rhinoceros sondaicus*), and Russell’s viper (*Daboia russelii siamensis*) are all examples of species occurring in Java and the monsoon mainland but not the rainforest belt (Lekagul and McNeely, 1977; Peter Paul van Dijk, pers. com.). Since none of these would have been transported by humans, they are probably relict populations of a wider Pleistocene distribution, when a drier climate created deciduous forests and seasonally fluctuating rivers and floodplains over a much wider region (Lekagul and McNeely, 1977; Whitten et al., 1996; Peter Paul van Dijk, pers. com.). Even though *M. subtrijuga* is more likely than the above species to have been transported by man, it is possible that it too is a Pleistocene relict.

Despite this possibility, it is likely that *M. macrocephala* and *M. subtrijuga* are two of the many Indochinese endemics whose populations are primarily found north of the Isthmus of Kra (Lovich, 1994; Rainboth, 1996; Inger, 1966, 1999). Lovich’s (1994) analysis of the zoogeography of Southeast Asian turtles suggests that less than 50% of Indochinese turtles are found south of the Isthmus of Kra. The Isthmus of Kra has acted as an effective barrier to migration for many turtle species because it coincidentally lies at the boundary of two distinct climatic regions. To the south of Kra, aseasonal conditions occur with year-round rain, tropical evergreen rainforests and higher temperatures. To the north of Kra, seasonal monsoons occur with mainly deciduous forests and lower temperatures (Lovich, 1994; Rainboth, 1996; Inger, 1966, 1999). Lovich’s (1994) analysis also suggests that Southeast Asia consists of two primary faunal regions, a mainland Indochinese region and a Sundaic region (Malay Peninsula, Sumatra, Borneo, and Java). The existence of distinct Indochinese and Sundaic faunas is supported by the distribution patterns of fish (Kottelat, 1989; Rainboth, 1996), amphibians (Inger, 1966, 1999), and mammals (Lekagul and McNeely, 1977; Corbet and Hill, 1992).

Animals that do not occur south of the Isthmus of Kra, like *Malayemys*, may have been poor dispersers, may have arrived at the Sunda Shelf too late (i.e., after the last exposure in the late Pleistocene), or may have gotten caught on the shelf during one of the many times sea levels rose during the Pleistocene (Lovich, 1994).

In addition to the many Southeast Asian records, members of the genus *Malayemys* have been found in several markets in China and northern Vietnam. These include records from Guangzhou (Farkas and Sasvári, 1992; Kuchling, 1995; Artner and Hofer, 2001) and Shenzhen (Kuchling, 1995) in southern China and those from Hanoi, Mon Cai, and Lang Son in northern Vietnam (Le Dien Duc and Broad, 1994, 1995). These areas are far outside the suspected natural range of this genus and any individuals found there were most certainly imported (Farkas and Sasvári, 1992; Kuchling, 1995; Artner and Hofer, 2001; van Dijk and Thirakhupt, in press).

Acknowledgments

This study would not have been possible without specimen loans or access from many museum curators, technicians, and collection managers. Special thanks goes to George R. Zug and Robert V. Wilson of the Smithsonian Institution for access to specimens, workspace, and endless hours of loan processing on my behalf; Marinus Hoogmoed and Franz Tiedemann for their wonderful hospitality during my visits to Leiden and Vienna; Michele L. Brophy and Thomas S. B. Akre for their assistance in the laboratory and cherished advice; and Carl H. Ernst, George R. Zug, John J. Miller, and Jay Shaffer from George Mason University for serving on my dissertation committee. This study was supported by a Herpetological Grant from the Chicago Herpetological Society, a Linnaeus Fund Turtle Research Award from the Chelonian Research Foundation, and numerous fellowships from George Mason University.

Table 1. Geographic distribution of turtles in the genus *Malayemys*. Based on available museum and literature records.

Species	Watershed	Country	Specific Locality	Latitude/ Longitude	Reference
<i>M. macrocephala</i>	Chao Phraya	Thailand	Ayutthaya, Ayutthaya Prov.	14.350 100.550	Flower, 1899
			Bangkok	13.733 100.500	AMNH R-80925, R-92277-79, R-94563; BMNH 98.4.2.2, 1898.11.8.1-.2, 1921.4.1.187, 1929.4.26.4; CAS 98890; FMNH 73815; KU 50509-11; MCZ R-29506, R-20302-03; MTKD 17107, 22274-75, 34593; NMBA #; NMW 29373.5, 29375; RMNH 4749, 14911.1-.2; SMF 42960, 52864-67, 70535; UF 43900, 111443; UMMZ 65138-50; USNM 70363, 71480, 72322-23, 79454, 104335; UMNH 10264-72; ZMH R401-11, R4005-07; ZMUC R2505-06, R25233; ZRC 2.72; ZSM 17/1956.1-.12, 22/1919, 55/1956.1-.3, 807/20; Bocourt, 1866; Flower, 1899; Smith, 1916, 1931; Cochran, 1930; Taylor, 1970
			Bung Boraped, Nakhon Sawan Prov.	15.670 100.243	CUB 1998.04.05.1
			central Thailand	N/A	Smith, 1916
			Chai Nat, Chai Nat Prov.	15.183 100.133	Thirakhupt and van Dijk, 1994

Table 1 (cont'd)

Species	Watershed	Country	Specific Locality	Latitude/ Longitude	Reference
			Chiang Mai, Chiang Mai Prov.	18.800 98.983	FMNH 171928, 190336-42; KU 50512-14; MCZ R-43083; MTKD 17098; RMNH 10374.1-.6; USNM 101580; Taylor, 1970
			48 km N Chiang Mai, Chiang Mai Prov.	N/A	USNM 102994
			Chom Thong, Chiang Mai Prov.	18.417 98.733	USNM 79499
			Chon Buri, Chon Buri Prov.	13.400 100.983	Taylor, 1970
			Dang Phraya Fai Mts.	N/A	NMW 1322, 29374.2-.3
			Huai Kasang (creek), 1 km S Ban Phu Toel, Phetchabun Prov.	15.566 101.063	UF 69380
			Klong Dam village, Samut Prakan Prov.	N/A	CAS 119939
			Klong Mae Wong, near Klong Larn National Park, Kamphaeng Phet or Tak Prov.	N/A	Thirakhupt and van Dijk, 1994
			Klong Mae Wong, Nakhon Sawan Prov. (ccordinates for prov- ince)	15.700 100.083	CUB 1992.07.04.6
			Lat Yao, Nakhon Sawan Prov.	15.750 99.800	Peter Paul van Dijk, pers. com.
			Lop Buri, Lop Buri Prov.	14.817 100.617	UMMZ 189186-87
			Nakhon Sawan, Nakhon Sawan Prov.	15.683 100.117	Thirakhupt and van Dijk, 1994
			30-35 km WNW Nakhon Sawan, Nakhon Sawan Prov.	N/A	Thirakhupt and van Dijk, 1994
			Phitsanulok, Phitsanulok Prov.	16.833 100.250	RMNH 25716
			Ping River	N/A	Thirakhupt and van Dijk, 1994
			Rangsit Area (Klong 7), Thanyaburi, Pathum Thani Prov.	14.017 100.733	CUB 1992.11.10.1-.2, 1999.01.05.15-.18; Srinarumol, 1995; van Dijk and Thirakhupt, in press
			8 km N Sara Buri, Saraburi Prov.	14.533 100.883	UF 69136
			Saraburi Prov.	14.700 100.867	MNHN 7962
			Sing Buri, Sing Buri Prov.	14.933 100.350	ZMH R3848
			Uthai Thani, Uthai Thani Prov.	15.367 100.050	Thirakhupt and van Dijk, 1994

Table 1 (cont'd)

Species	Watershed	Country	Specific Locality	Latitude/ Longitude	Reference
	Mae Klong	Thailand	Kanchanaburi, Kanchanaburi Prov.	14.033 99.533	Thirakhupt and van Dijk, 1994
			Mae Khlong basin	N/A	Thirakhupt and van Dijk, 1997
			Ratchaburi Prov.	13.533 99.800	Thirakhupt and van Dijk, 1994
			Samut Songkhram Prov.	13.400 100.00	Thirakhupt and van Dijk, 1994; Hutasingsh, 1998
			Tharang District, Phetchaburi Prov.	12.750 99.583	CUB 1999.01.05.1-.14; Srinarumol, 1995; van Dijk and Thirakhupt, in press
	Malay Pen- insula	Malaysia	east coast <i>Melaleuca</i> swamps in Terengganu and possibly Kelantan (Jambu Bongkok Forest Reserve, Terengganu)	4.917 103.350	Sharma and Tisen, 2000
			northern state of Kedah	6.000 100.667	Lim and Das, 1999; Sharma and Tisen, 2000; van Dijk and Thirakhupt, in press
			northern state of Perlis	6.500 100.250	Lim and Das, 1999; Sharma and Tisen, 2000; van Dijk and Thirakhupt, in press
			northern part of peninsu- lar Malaysia	N/A	Bourret, 1941; Ernst et al., 2000; Sharma, 1999
			peninsular Malaysia	N/A	KUZ 36800-01
			N/A	N/A	MSN 6; Nutaphand, 1979; van Dijk, 2000
	Malay Pen- insula	Thailand	Krabi, Krabi prov.	8.067 98.917	Mudde, 1991
			lower reaches of Pattani River, Pattani Prov.	N/A	BMNH 1903.4.13.1; Boulenger, 1903, 1912
			Pattani, Pattani Prov.	6.833 101.333	Taylor, 1970
			peninsular Thailand	N/A	Smith, 1916; van Dijk and Thirakhupt, in press
			lower reaches of Phatthalung River, Phatthalung Prov.	N/A	Annandale, 1916
			Phatthalung, Phatthalung Prov.	7.617 100.083	Laidlaw, 1901
			Trang, Trang Prov.	7.500 99.300	USNM 22951, 23111
			Yala, Yala Prov.	6.667 101.167	Laidlaw, 1901; Molluscan Pictures.com: Trip Report, 2003 (with photo record)
	Malay Pen- insula	N/A	Malay Peninsula	N/A	UF 85286; Siebenrock, 1909; de Rooij, 1915; Mertens and Wermuth, 1955; Wermuth and Mertens, 1961, 1977;
			northern part of Malay Peninsula	N/A	Smith, 1931; Pritchard, 1979

Table 1 (cont'd)

Species	Watershed	Country	Specific Locality	Latitude/ Longitude	Reference
	SE Coastal Area of Thailand	Thailand	Laem Sing, Chanthaburi Prov.	12.483 102.067	USNM 72212
	N/A	Thailand	N/A	N/A	AMNH R-80924; BMNH #, 59.7.8.4-.5, 59.7.8.7, 78.2.14.8; CRI 2760; FMNH 17915-16, 17926-27; LACM 8115; MCZ R-29504, R-55149; MHNG 1531.55-.73; MTKD 3694-95, 9054, 11111-13, 35034; NMW 29374.2-.3; RMNH 25716; SMF 7531, 56091; UF 68969, 85203; UMMZ 128404; Gray, 1859, 1861, 1869, 1870; Günther, 1864; Boulenger, 1889, 1912; Flower, 1899; Siebenrock, 1903, 1909; de Rooij, 1915; Smith, 1931; Bourret, 1941; Mertens and Wermuth, 1955; Wermuth and Mertens, 1961, 1977; Taylor, 1970; Nutaphand, 1979; Pritchard, 1979; Ernst and Barbour, 1989; Ernst et al., 2000; Touch Seang Tana et al., 2000; van Dijk, 2000; van Dijk and Palasuwan, 2000; van Dijk and Thirakhupt, in press
M. subtrijuga	Mekong	Cambodia	Chay Reap Village (west bank of Sre Ambel River), Sre Ambel District, Koh Kong Prov.	11.486 103.783	FMNH 259400; Stuart and Platt, 2004
			Kampong Thom, Kampong Thom Prov.	12.700 104.900	FMNH 259401; Stuart and Platt, 2004
			Phnom Penh Municipality	11.550 104.917	FMNH 259404; Stuart and Platt, 2004
			Prasat Village (Bassac Marshes), Kandal Prov.	11.295 105.144	Stuart and Platt, 2004
			Prek Toal Village (on Tonle Sap), Koh Chivang Commune, Ek Phnom District, Battambang Prov.	13.241 103.659	Stuart and Platt, 2004
			Sary Village (captured in Tonle Sap), Kampong Thom Prov.	12.808 104.737	Stuart and Platt, 2004
			Siem Reap, Siem Reap Prov.	13.367 103.850	FMNH 259402-03; Stuart and Platt, 2004; Kurt Buhlmann, pers. com. (with photo record); Peter Pritchard, pers. com. (with photo record)
			Snoc Tru, Kampong Chhnang Prov.	12.517 104.450	MNHN 1963.746
			N/A	N/A	BMNH 60.8.28.6, 61.4.12.17, 1861.4.12.15; NMW 29374.1; Gray 1861, 1869, 1870; Günther, 1864; Morice, 1875; Tirant, 1885; Boulenger, 1889, 1912; Boettger, 1892; Flower, 1899; Siebenrock, 1903, 1909; de Rooij, 1915; Bourret, 1941; Mertens and Wermuth, 1955; Wermuth and Mertens, 1961, 1977; Ernst and Barbour, 1989; Ernst et al., 2000; Touch Seang Tana et al., 2000; van Dijk, 2000; van Dijk and Thirakhupt, in press
	Mekong	Laos	Ban Chocksavang Village, Khammouane Limestone NBCA, Khammouane Prov.	N/A	FMNH 258888, 259653-54; Stuart and Platt, 2004

Table 1 (cont'd)

Species	Watershed	Country	Specific Locality	Latitude/ Longitude	Reference
			Ban Lak Village, Khammouan Limestone NBCA, Khammouane Prov.	N/A	Stuart, 1998b, 1999
			Ban Nong Soumhoung Village, Dong Khanthung Proposed NBCA, Champasak Prov.	14.283 105.667	Stuart, 1998a, 1999
			Ban Tap Seng Village, Dong Khanthung Pro- posed NBCA, Mounlapamok District, Champasak Prov.	14.250 105.683	FMNH 255267; Stuart and Platt, 2004
			Ban Thahin Village, Dong Khanthung Pro- posed NBCA, Mounlapamok District, Champasak Prov.	14.150 105.583	FMNH 255268; Stuart, 1998a, 1999; Stuart and Platt, 2004
			Ban Vieng Village, Khammouan Limestone NBCA, Yommalat Dis- trict, Khammouan Prov.	17.333 104.950	FMNH 255269; Stuart and Platt, 2004
			Dong Phou Vieng NBCA, Savannakhet Prov.	N/A	Stuart, 1999
			Pakxe, Champasak Prov.	15.117 105.783	Nash, 1997
			Phou Khaokhoay NBCA, Vientiane and Bolikhamsay provinces	N/A	Stuart, 1999
			Vientiane Municipality	17.967 102.600	FMNH 258868; Stuart, 1999; Stuart and Platt, 2004
			Xe Pian NBCA, Champasak and Attapeu provinces	N/A	Stuart, 1999
			N/A	N/A	Ernst et. al., 2000; Stuart et al., 2000; Stuart and Timmins, 2000; Touch Seang Tana et al., 2000; van Dijk, 2000; van Dijk and Thirakhupt, in press
	Mekong	Thailand	Nakhon Ratchasima, Nakhon Ratchasima Prov.	15.000 102.100	CUB 1991.9.1.2
			Sakaerat, Amphoe Pak Thong Chai, Nakhon Ratchasima Prov.	14.717 102.017	CUB 1993.01.16.2, 1993.01.16.9
	Mekong	Vietnam	Ca Mau, Ca Mau Prov.	9.250 105.167	Le Dien Duc and Broad, 1995; Nash, 1997

Table 1 (cont'd)

Species	Watershed	Country	Specific Locality	Latitude/ Longitude	Reference
			Can Tho Prov.	10.033 105.783	Le Dien Duc and Broad, 1994, 1995
			Ho Chi Minh City, Ho Chi Minh Prov.	10.750 106.667	MTKD 18811, 22525, 26087; ZRC 2.2592; Siebenrock, 1903; Smith, 1931; van Dijk and Thirakhupt, in press; Peter Pritchard, pers. com.
			Long Xuyen, An Giang Prov.	10.383 105.417	BMNH 1920.1.20, 2544-45
			Mekong Delta, southern Vietnam	N/A	MTKD 23937
			Nam Can, Ca Mau Prov.	8.683 104.933	Le Dien Duc and Broad, 1994, 1995
			Phung Hiep, Can Tho Prov.	9.812 105.820	ROM 37057-66
			Rach Gia, Kien Giang Prov.	9.917 105.083	Le Dien Duc and Broad, 1994, 1995
			southern Vietnam	N/A	Morice, 1875; Siebenrock, 1909; Boulenger 1912; de Rooij, 1915; Smith, 1931; Bourret, 1939, 1941; Mertens and Wermuth, 1955; Wermuth and Mertens, 1961, 1977; Pritchard, 1979; Ernst and Barbour, 1989; Geissler and Jungnickel, 1989; Ernst et al., 2000; Hendrie, 2000; van Dijk and Thirakhupt, in press
			U Minh Region, Ca Mau and Rach Gia provinces	9.467 105.033	Le Dien Duc and Broad, 1994, 1995
			U Minh Thuong Nature Preserve, Kien Giang Prov.	9.600 105.083	Safford et al., 1998; Turtle Conservation and Ecology Project, 2001
			U Minh Thuong Nature Preserve, An Minh Dis- trict, Kien Giang Prov. (flooded field)	9.625 105.133	FMNH 259394; Stuart and Platt, 2004
			U Minh Thuong Nature Preserve, Vinh Thuang District, Kien Giang Prov. (flooded field)	9.544 105.086	FMNH 259075; Stuart and Platt, 2004
			N/A	N/A	CRI 3231, 3276, 3442-51, 3703, 3807-08, 3850-54, 4077; NMW 29373.3; Touch Seang Tana et al., 2000; van Dijk, 2000; William McCord, pers. com.
	Java	Indonesia, Java	Bantam Prov. (former residency in western Java)	N/A	RMNH 6082, 6084-85; Schlegel and Müller, 1844; Hubrecht, 1881
			Banten, Banten Prov.	-6.000 106.150	MZB; de Rooij, 1915
			Cirebon, Jawa Barat Prov.	-6.767 108.550	Kopstein, 1938
			Depok, Jawa Barat Prov.	-6.367 106.750	MCZ R-7819; USNM 43870-71, 44121-22; Barbour, 1912; de Rooij, 1915

Table 1 (cont'd)

Species	Watershed	Country	Specific Locality	Latitude/ Longitude	Reference
			Duri, Jakarta Raya Prov.	-6.183 106.77	de Rooij, 1915
			Jakarta, Jakarta Raya Prov.	-6.133 106.750	BMNH 63.12.4.38, 71.4.10.2; MNHN 1905.57; MZB ; NMW 29373.4; RH 33, 140-44; RMNH 28045; SMF 52792, 58097; ZMUC R25229-32; Gray 1871, 1873; de Rooij, 1915
			Surabaya, Jawa Timur Prov.	-7.233 112.750	ZMH R399-400, R3088
			Tasikmalaya, Jawa Barat Prov.	-7.333 108.267	MZB
			west Java	N/A	RMNH 22213
			N/A	N/A	NMW 1722, 29371.1-.4; RMNH 94; SMF 7532-35; ZMZ 824-26; ZSM 2/1949; Bleeker, 1857; Blyth, 1863; Gray, 1870; Boulenger, 1889, 1912; Flower, 1899; Siebenrock, 1903, 1909; Dammerman, 1929; Lindholm, 1931; Smith, 1931; Bourret, 1941; Mertens and Wermuth, 1955; Wermuth and Mertens, 1961, 1977; Nutaphand, 1979; Pritchard, 1979; Ernst and Barbour, 1989; Whitten and McCarthy, 1993; Ernst et al., 2000; Samedi and Iskandar, 2000; van Dijk and Thirakhupt, in press
	N/A	Indonesia	N/A	N/A	NMBE 44a/14; RMNH 3960; van Dijk, 2000
<i>M. macrocephala</i> & <i>subtrijuga</i> (mixed)	Sumatra	Indonesia, Sumatra	Duri, Riau Prov.	1.450 101.250	MZB; Iverson, 1992
			N/A	N/A	NMW 29376.1-.4; Samedi and Iskandar, 2000
<i>Malayemys</i> sp. (unknown)	Northern Vietnam	Vietnam	Hanoi	N/A	Le Dien Duc and Broad, 1994, 1995
			Mon Cai	N/A	Le Dien Duc and Broad, 1994, 1995
			Lang Son	N/A	Le Dien Duc and Broad, 1994, 1995
	Southern China	China	Guangzhou	N/A	Farkas and Sasvári, 1992; Kuchling, 1995; Artner and Hofer, 2001
			Shenzhen	N/A	Kuchling, 1995

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Notes on Herpetofauna 7: Herpetological Diversity of the Low Basin of the Nazas River in Durango, Mexico

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Abstract

We identify important changes in vegetation structure along riparian areas that generally influence the distribution and abundance of amphibians and reptiles. Knowledge of diversity, distribution and current status of the herpetofauna is a prerequisite for elaborate conservation plans in high-priority areas where anthropogenic impact threatens the community's biological integrity. We recorded the diversity of amphibians and reptiles observed by means of random transects in the low basin of the Nazas River in the state of Durango, Mexico. Seven species of amphibians, 22 lizards, 23 colubrids and 3 turtles were identified. We suggest that the low basin of the Nazas River is an important habitat for those species restricted to specific and reduced microhabitats.

Introduction

The state of Durango, Mexico, enjoys a wide diversity of amphibians and reptiles. Much of the herpetological diversity is due to the transition between the dry, extratropical regions and the high extratropical areas (West, 1971). These regions are defined by the dominant vegetation and general climatic conditions, as has been proposed in the geographical delimitation of Mexican herpetology.

Although the precise number of amphibian and reptile species for the state of Durango is unknown, more than 100 such species are recognized, widely distributed in the state (Webb and Hensley, 1959; Behler and King, 1979; Webb, 1984; McCrainie and Wilson, 1987; Conant and Collins, 1998). Semi-arid, wet and riparian conditions in a variety of localities provide habitats for a number of species. The latter habitat type shows the greatest contrast because the river tends to modify the dominant vegetation structure along its path within a semi-desert biome. The vegetation changes not only influence herpetological distribution, but also provide a wide variety of microhabitats favorable to endemic or restricted species of all types along the riparian corridor.

The low basin of the Nazas River is located in an area constantly under urban growing pressure. For this reason the riparian zone could be extremely susceptible to changes in the vegetation structure and in the regional hydrology. Disturbance of this ecosystem has resulted from a combination of factors: an inadequate urban development plan; lack of an environmental surveillance program; an inefficient ecotourist organization, which has been intensifying its activities; and fragmentation and deforestation of the riparian vegetation. Moreover, the Nazas River has been subject to high agricultural pressure and to the introduction of foraging species. Garza et al. (2001) have registered 51 amphibian and reptiles for the Nuevo Graseros and Loma Verde localities; however, there is ambiguity in the information related to the herpetofauna. Valencia et al. (2002) only provide information for

reptiles. Both researchers suggest the need for a more specific study for the Nazas River and the Cañon de Fernandez. The main objective of this study was to provide a current evaluation of herpetofauna diversity for the Parque Ecológico Estatal Cañon de Fernandez, and to develop a management and conservation plan for the low basin of the Nazas River.

Methodology

During August to December of 2003 we visited, on more than ten occasions, six areas selected as priority protection areas in the low basin of the river Nazas in Durango. Each priority area proposed by Garza et al. (2001) was sampled each time, and within each core area designated at least one transect was established. Transects were selected in a partially random way, considering accessibility and spatial distribution of habitats/vegetation types. Transects were recorded by three persons separated from one another by approximately six meters. Transect length varied according to the accessibility of the sampling point (generally from 400 to 600 m) and the observation range was within a 5-m wide path (Ortega et al., 1986). In the riparian zone, diurnal and nocturnal sampling were carried out (Bambaradeniya et al. 2002; González-Romero et al., 1989). In addition to the survey data, we considered personal records of amphibians and reptiles previously observed during non-systematic samples. Hills were not sampled at night. Searching techniques included flipping rocks, dead trunks and aquatic vegetation (Campbell and Christman, 1982). Lizards were captured by noose technique or by hand, snakes were captured with hooks, and amphibians and turtles were captured using hand nets. Both amphibians and reptiles were identified taxonomically at the site of capture and released unharmed. Field guides used were Behler and King (1979), Conant and Collins (1998) and the dichotomous keys of Powell et al. (1998). We registered the number of individuals observed for each species and the habitat in which they were most frequently observed. Comments on abundance are based on the following arbitrarily defined terms: < 5 individuals = Rare (R); 5 to 9 = uncom-

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mon (U); 10 to 20 = common (C); and > 20 = abundant (A). Allowing for the difference in time of collecting these terms of relative abundance are comparable to those of Staton and Dixon (1977).

Results and Discussion

During this survey we recorded a total of 28 species. However, by including the reports from Garza et al. (2001) we obtained a checklist of 7 amphibians, 22 lizards, 23 snakes and 3 turtles (Table 1). Although this is less herpetological diversity than can be found in the oak-pine forest in Durango’s portion of the Sierra Madre Occidental (with 86 species, McCranie and Wilson, 1987) and less than the same corridor of the Mazatlan–Durango region (with 145 species, see Webb and Hensley, 1959, and Webb, 1984), we recognize it as an important zone for amphibian and reptile diversity because of the special nature of the habitat in comparison with the surrounding area.

On the other hand, the low basin of the Nazas River is considered as an important ecotone with nearly 40% of the total herpetological diversity registered for Durango, Mexico (McCranie and Wilson, 1987; Webb and Hensley, 1959; Webb, 1984).

It is important to consider the influence of vegetation and habitat type on the distribution of the herpetofauna. Twenty-six species (47.3% of the total) were recorded from the river itself or the narrow strip of riparian vegetation (although some of these species are not restricted to this area). Twenty-seven species (49.1%) were more frequently observed in arid zones, without riparian vegetation influence, on the mountain slope (González-Romero et al., 1989), and some species are restricted to this habitat type. Only seven species (12.7%) were registered exclusively in the hills zone.

Of the priority species, we recorded the endemic lizard *Sceloporus maculosus* with a common relative abundance. It

showed a high preference for slopes with limestone rocks, exclusively in the “hills” habitat. The night lizard *Xantusia vigilis* was distributed exclusively in areas with a high amount of agaves (*Agave* sp.) and yuccas.

One of the most important habitats along the river is the reed vegetation, where we observed a high frequency of snakes, turtles and amphibians. We suggest that this habitat type may be used for refuge and nesting sites by the seven amphibian species, by the colubrids *Nerodia erythrogaster*, *Thamnophis cyrtopsis* and *Thamnophis marcianus*, and by the turtles *Kinosternon flavescens*, *Kinosternon hirtipes* and *Trachemys scripta*.

We feel that other forms of riparian vegetation in this region are also extremely important. Such vegetation includes gallery forest, composed by *Taxodium mucronatum*, *Salix nigra*, *Populus tremuloides* and *P. fremontii*, and scrub habitat characterized by *Prosopis glandulosa*, *P. laevigata* and *Casipora jeru-yana*. These areas are where *Gerrhonotus liocephalus*, *Sceloporus grammicus* and *Eumeces obsoletus* were found in this survey, although with very low frequency.

Finally, we consider the low basin of the Nazas River as an important habitat because it includes a high proportion of the herpetological diversity currently registered for the state of Durango and the whole transition ecotone between the dry extratropical zone and the high extratropical zone.

Acknowledgments

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Table 1. Herpetofauna registered for the low basin of the Nazas River and nearby hills in Durango, Mexico. Spanish and English common names according to Liner (1994). Abundance is shown only for species actually encountered during the survey described in the text: R = rare; U = uncommon; C = common; A = abundant. Status is shown as indicated by NOM-059-ECOL-2001: A = amenazada (threatened); E = endemica (endemic); Pr = protección especial (special protection); SE = sin estatus (without status).

	Family	Scientific name	Spanish common name	English common name	Abundance	Status	Habitat types		
							Riparian vegetation and river	Arid zones on mountain slopes	Hills
Anurans	Bufonidae	<i>Bufo cognatus</i> †	Sapo de las grandes planicias	Great Plains toad		SE	●		
		<i>Bufo debilis</i> †	Sapo verde	Western green toad		Pr	●		
		<i>Bufo punctatus</i> †	Sapo manchas rojas	Red-spotted toad		SE	●		
	Microhylidae	<i>Gastrophryne olivacea</i> †☆	Ranita olivo	Great Plains narrow-mouthed toad	R	Pr	●		
	Scaphiopodidae	<i>Scaphiopus couchii</i> †	Sapo de espuela	Couch’s spadefoot		SE	●		
		<i>Spea hammondi</i> †	Sapo excavador	Western spadefoot		SE	●		
	Ranidae	<i>Rana berlandieri</i> †☆	Rana leopardo	Rio Grande leopard frog	U	Pr	●		

Table 1 (cont'd)

	Family	Scientific name	Spanish common name	English common name	Abundance	Status	Habitat types		
							Riparian vegetation and river	Arid zones on mountain slopes	Hills
Lizards	Anguidae	<i>Gerrhonotus liocephalus</i> †✱	Culebra con patas texana	Texas alligator lizard	R	Pr	●		
	Crotaphytidae	<i>Crotaphytus collaris</i> †✱	Cachorón	Collared lizard	R	A		●	
		<i>Gambelia wislizenii</i> †	Cachorón leopardo de nariz-larga	Long-nosed leopard lizard		Pr		●	
	Eublepharidae	<i>Coleonyx brevis</i> †✱	Cuija texana	Texas banded gecko	R	Pr		●	
	Iguanidae	<i>Cophosaurus texanus</i> †✱	Lagartijón sordo	Greater earless lizard	C	A		●	
		<i>Holbrookia maculata</i> †	Lagartija sorda pequeña	Lesser earless lizard		SE		●	
		<i>Phrynosoma cornutum</i> †✱	Camaleón texano	Texas horned lizard	R	A		●	
		<i>Phrynosoma modestum</i> †✱	Tapayatzin	Round-tailed horned lizard	R	SE		●	
		<i>Sceloporus belli</i> †◇	Lagartija rayada	Prairie lizard		SE			
		<i>Sceloporus grammicus</i> †✱	Chintete de mezquite	Mesquite lizard	R	Pr	●		
		<i>Sceloporus jarrovi</i> ✱	Lagartija espinosa de Yarrow	Yarrow's spiny lizard	C	SE			●
		<i>Sceloporus maculosus</i> ✱	Lagartija maculada	Spotted spiny lizard	A	E, Pr			●
		<i>Sceloporus magister</i> †	Vejore del desierto	Desert spiny lizard		SE			●
		<i>Sceloporus poinsettii</i> †	Lagartija espinosa de Barrada	Crevice spiny lizard		SE			●
		<i>Sceloporus undulatus</i> †✱	Lagartija de Pampa	Prairie lizard	U	SE	●		
		<i>Uta stansburiana</i> †✱	Lagartija de manchas laterales	Side-blotched lizard	U	SE		●	
	Scincidae	<i>Eumeces obsoletus</i> †✱	Lincer llanero	Great Plains skink	R	SE	●		
	Teiidae	<i>Aspidoscelis gularis</i> †✱	Huico pinto texano	Texas spotted whiptail	A	SE		●	
		<i>Aspidoscelis inornatus</i> †	Huico liso	Little striped whiptail		SE		●	
		<i>Aspidoscelis septemvittatus</i> †	Huico pinto	Plateau spotted whiptail		SE		●	
Snakes		<i>Aspidoscelis tigris</i> †✱	Huico occidental	Western whiptail	A	SE		●	
	Xantusidae	<i>Xantusia vigilis</i> †✱	Lagartija nocturna del desierto	Desert night lizard	U	SE		●	
	Colubridae	<i>Arizona elegans</i> †	Culebra brillante	Glossy snake		SE		●	
		<i>Bogertophis subocularis</i> †	Culebra ratonera de Trans-Pecos	Trans-Pecos ratsnake		SE		●	
		<i>Diadophis punctatus</i> †	Culebra de collar	Ring-necked snake		SE	●	●	
		<i>Elaphe guttata</i> †✱	Culebra de maíz	Cornsnake	R	SE	●		
		<i>Gyalopion canum</i> †	Culebra de naricilla occidental	Chihuahuan hook-nosed snake		SE		●	
		<i>Heterodon nasicus</i> †	Culebra nariz de cerdo occidental	Western hog-nosed snake		Pr	●		
		<i>Hypsiglena torquata</i> †	Culebra nocturna	Texas nightsnake		Pr		●	
		<i>Lampropeltis getula</i> †	Culebra real común	Common kingsnake		A	●	●	
		<i>Masticophis flagellum</i> †	Chirrionera	Coachwhip		A	●	●	
		<i>Masticophis taeniatus</i> †✱	Culebra látigo rayada	Desert striped whipsnake	R	SE	●	●	
		<i>Nerodia erythrogaster</i> †✱	Culebra de agua de panza clara	Blotched watersnake	U	A	●		
		<i>Pituophis catenifer</i> †✱	Cincuate	Gophersnake	R	SE		●	
		<i>Rhinocheilus lecontei</i> †	Culebra de nariz-larga	Long-nosed snake		SE		●	
		<i>Sonora semiannulata</i> †	Culebra de arena	Groundsnake		SE		●	
		<i>Thamnophis cyrtopsis</i> †✱	Culebra lineada de bosque	Black-necked gartersnake	R	A	●		
		<i>Thamnophis marcianus</i> †✱	Sochuate	Checkered gartersnake	R	A	●		
	Elapidae	<i>Micrurus tener</i> †	Coral texano	Texas coralsnake		Pr	●		
	Leptotyphlopidae	<i>Leptotyphlops humilis</i> †	Culebrilla ciega de occidente	Western threadsnake		SE	●		
Viperidae		<i>Crotalus atrox</i> †	Víbora serrana	Western diamond-backed rattlesnake	U	Pr	●	●	
		<i>Crotalus lepidus lepidus</i> †✱	Cascabel de las rocas	Mottled rock rattlesnake	R	Pr			●
		<i>Crotalus lepidus klauberi</i> †✱	Cascabel rayada de piedra	Banded rock rattlesnake	R	Pr			●
		<i>Crotalus molossus</i> †✱	Cascabel serrana	Black-tailed rattlesnake	R	Pr		●	●
		<i>Crotalus scutulatus</i> †	Chiauhcoatl	Mojave rattlesnake		Pr		●	

Table 1 (cont'd)

	Family	Scientific name	Spanish common name	English common name	Abundance	Status	Habitat types		
							Riparian vegetation and river	Arid zones on mountain slopes	Hills
Turtles	Kinosternidae	<i>Kinosternon flavescens</i> †✧	Casquito amarillo	Yellow mud turtle	R	SE	●		
		* <i>Kinosternon hirtipes</i> Ω†	Casquito de pata rugosa	Valley of Mexico mud turtle		Pr	●		
	Emydidae	<i>Trachemys scripta</i> ✧	Tortuga pinta	Pond slider	U	Pr	●		

✧ Species observed in the present study.
† Species reported by Garza et al., 2001.
Ω Species reported by Valencia et al., 2002.
◇ Invalid species. At the moment it is considered a subspecies of *S. undulatus* (Bell et al., 2003).
* A taxonomic review suggests that the species indicated as *K. hedionda* by Garza et al. (2001) was possibly mistaken with *K. hirtipes*.

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HerPET-POURRI

by Ellin Beltz

Rana-mator

Scientists studying how wood frogs freeze and unfreeze describe their work as having great potential for human organ transplant transport and other applications, but not freezing people forever! As one of them pointed out, the frogs wake up in spring. The news reports online also include time lapse video of the frog unfreezing over several hours. The way this works is that frogs store starch in their livers. When the freeze begins, the starch converts to glucose, making the frogs incredibly diabetic. Glucose makes water freeze at a lower temperature (remember ice cream in the freezer is slushy when ice cubes are solid) and so the frogs' cells stay liquid even as ice fills in the spaces around the cells. As it warms up, the ice crystals melt, the glucose is reconverted to starch and the frog hops away. [*Miami Herald*, December 14, 2004, from Alan Rigerman, *Orlando Sentinel*, December 26, 2004, from Bill Burnett, Online *Washington Post* story from Jim Harding]

Live snake found in Hawaiian store

Workers unpacking a shipment of Christmas trees from Oregon at an O'ahu store discovered a 13-inch gartersnake curled up in the bottom of the shipping container. The local agriculture inspector said that the trees are shaken before shipment, but also rather blithely stated, "We've found garter snakes in containers before." The snake is now on display in the plant quarantine office. [*The Honolulu Advertiser*, December 7, 2004, from Ms. G. E. Chow]

Boa are you far from home!

"A young couple swimming at a beach in southern Norway . . . got the fright of their lives when . . . a large snake thought to be a boa constrictor . . . slithered past. . . . Police launched a hunt . . ." but it wasn't found. [Orlando, Florida *Sentinel*, August 14, 2004]

For a very good cause

A lovely color calendar of Canada's Endangered Reptiles landed in my mailbox right after last month's column, so let me tell you about it now, and suggest you email its creator to order a copy for yourself. First, there's lots of pictures, not just one big one on every page, but every empty day around the 30 or 31 days of the average month has a different picture in it. Also the calendar supports the Kawartha Turtle Trauma Centre in Peterborough, Ontario, which takes in injured native turtles particularly those injured on roadways, rehabilitates them for a year or more and releases them when possible. Visit <http://www.kawarthaturtle.org> for more information on the Centre, and email Dr. Ronald J. Brooks of the University of Guelph brookslab@hotmail.com to find out how to have one of these in your collection too. The back cover contains the rather amazing list of reptiles extirpated from Canada:

- Timber Rattlesnake, *Crotalus horridus*
- Eastern Box Turtle, *Terrapene carolina*
- Pacific Gophersnake, *Pituophis catenifer*
- Pigmy Short-horned Lizard, *Phrynosoma douglasii*
- Pacific Pond Turtle, *Actinemys marmorata*.

A reason to go east

The Fernbank Museum of Natural History in Atlanta is opening a special exhibit of more than 100 live anurans called "Frogs: A Chorus of Colors." As might be expected, brightly colored frogs predominate. Call the Museum at (404) 929-6398 for more information. [*AAA Going Places*, January/February 2005]

Chance or?

Going through my clipping files, holiday cards and piles of paper, I noticed that not one but two alligators were caught in northern Indiana on consecutive days, July 28 and 29, 2004. One was pulled from the waters of Salt Creek by some kids [*Valparaiso Times*, July 29, 2004, from Jack Schoenfelder] the day after the other was pulled from a West Lafayette retention pond. [*South Bend Tribune*, July 28, 2004, from Garrett Kazmierski]

Pinheads of evolution

Two species of Queensland, Australia, snakes apparently incorporated Nicholas Chamfort's (1741–1794) dictum "Swallow a toad in the morning if you want to encounter nothing more disgusting the rest of the day" into their genetic code. The Australian Broadcasting Company reports: "Professor of evolutionary biology Richard Shine says studies on the black snake and the golden tree snake have found over the 70 years the [cane] toads have been in Queensland, the snake's heads have become smaller and their bodies larger . . . [which] means the snakes are eating smaller toads and are less likely to be killed by the toad's poison. 'A big snake with a small head turns out to be the best possible size and shape if you want to survive eating a toad,' Professor Shine said. 'It means that the biggest toad you can eat is actually quite small compared to your own body size so it's pretty unlikely that you can get enough poison in from the toad in to kill you.'" [December 23, 2004, from Wes von Papineau]

Life imitates someone else's life

The *Chicago Tribune* reports that a Lake Zurich man was arrested in a sting operation when he tried to sell two copperheads and a puff adder in the parking lot of the Gurnee Mills Mall for \$300. Unfortunately, and apparently a big surprise to the alleged perpetrator, the buyers were undercover agents. Nine more venomous snakes were found in the man's home, including two rhino vipers, two West African gaboon vipers, and five eyelash vipers. The 23-year-old man was promptly charged with possession of dangerous animals, and commercialization of state resources particularly the unauthorized sale of the copperheads. He faces up to a year in jail and a \$4,000 fine if convicted; although authorities described him as "very cooperative." The man's internet site clued in the authorities who set up the buy. [January 12, 2005, from Ray Boldt]

Frogs continue to vanish

The Australian Broadcasting Company reports: "Down in the cool alpine areas of Australia's snowy ranges, the bogs are

silent. Yet only a few decades ago, they emitted a cacophony of strange sounds — a nasal grunting ‘Ah-rurkk . . . urkk . . . urkk,’ or a short, harsh ‘squelch.’ Old timers, who kept cattle in the boggy, treeless high plains of the Snowy Mountains tell stories of a strange little frog, black with vivid yellow stripes, which could be found in huge numbers. Peep under any clump of moss or grass and you’d find some of the little guys. Now it may be days or even weeks before David Hunter, an amphibian specialist at the University of Canberra, can locate a single southern corroboree frog, *Pseudophryne corroboree* in its natural habitat. Unlike many Australian species, the decline of the frog has not been a slow slide into oblivion. On the contrary, southern corroboree frogs were abundant within their tiny 400 square kilometer range until the late 1970s. Then, within a matter of five years, something happened that reduced them to just one tenth of their former population. Since then, the population has suffered a further catastrophic decline. In a 1999 survey, 218 frogs were counted across the range, but only 64 could be found this year. Hunter estimates the numbers remaining represent perhaps 0.001 per cent of the population of three decades ago. . . . [In the late 1990s] chytrid fungus had been detected in corroboree frog populations. Chytrid, as it is now widely known, has been blamed for decimating a number of Australian frog species. Thought to have been accidentally introduced into Australia in the late 1970s, it is an insidious disease that is often fatal. The fungus literally eats keratin, the main protein in frog skin. And frogs need their skin—not just for protection, but to breathe and even to drink through. Infected frogs simply suffocate.” [December 16, 2004, from Wes von Papineäu] Eggs and tadpoles have been dying in record numbers due to the high temperatures and drought conditions that have prevailed in Australia in the past few decades, which may also have an impact.

Toads immune to Chytrid

Four of twelve toads equipped with radio transmitters in a study in the Grand Teton National Park, Wyoming, tested positive for chytrid fungus in July. When they were re-examined in September they no longer had the fungus. No one knows why or how they shed the killer. Meanwhile, no dead toads were found, but dead Columbia spotted frogs were recorded. [Casper, Wyoming *Star-Tribune*, January 2, 2005, from Wes von Papineäu] You can also read all about chytrid at <http://www.cdc.gov/ncidod/EID/vol10no12/03-0804.htm>

Degrees no substitute for common sense

Coqui frogs, *Eleutherodactylus coqui*, are apparently not affected by chytrid fungus. According to the *Hawaii Tribune Herald*, “Researchers at the University of Colorado exposed coqui to the chytrid . . . fungus, but none of them died. The fungus killed all of the boreal toads in the same tests.” Next the article describes a clueless entomologist in Hawaii who was hoping to release chytrid in the wilds of the Hawaiian Islands to take out the coqui frogs! Never you mind we have no clue what chytrid does to any other organism in the ecosystem, let’s just get really shortsighted and release another non-native, invasive, ineradicable fungus that kills nearly everything in its path. It just makes me wonder: Did this highly educated entomologist ever hear the lecture about mice, rats,

roaches, goats, sheep, cows, cats, dogs and marine toads? Meanwhile, in the coqui’s home of Puerto Rico, three of 16 frog species have gone extinct and there is concern about why the frogs are disappearing on their home island. [December 21, 2004, from Paul Breese]

Creature Shock

Sometimes I wish I could run news photos. Instead, imagine a narrow, flat bridge on the University of Miami campus. Two undergraduates, in chopped off pants and red tinted hair walk away from the camera. Coming towards the camera are two guys who look like they escaped from Steve Irwin’s zoo; they’re even carrying a crocodile with its jaws tied shut with a bit of rope and duct tape. It’s an endangered American croc that was living in a lake on campus. A cold snap forced it up to bask and it was captured for relocation. [December 13, 2004] No sooner had that crocodile been removed, but another, larger one floated up. School officials promise it will also be humanely removed, as soon as humanly possible. The first one only took 17 trips and record breaking cold to catch. [December 15, 2004] By December 31, the croc was still evading capture and the trapper was suggesting it was on winter break like everyone else! [all from the *Miami Herald*, from Alan Rigerman]

Off to a better place

- Three live alligators were found in a Missouri barn owned by a man shot to death by Des Moines, Iowa, police at an apartment building he owned in town. The man was a suspect in the arson destruction of an 88-year-old church and several other structures in Missouri and Iowa. The alligators were shipped to Florida. [*Des Moines Register*, December 24, 2004, from Wes von Papineäu]
- Police officers responding to a call found a resident dead of an overdose. Looking around, they found a 3-foot-long baby alligator in the bathtub. Officers were unable to find a shipper to take the gator south, so one of them decided to drive the critter to Florida. He said, “He’ll be happy at Reptiland. The people there are just great. . . . I’ve been waiting for something like [this gator to] turn up in [town] for years. I’m glad I got to be the one to take care of it.” [Lancaster, Pennsylvania, *Intelligencer Journal*, January 5, 2005, from Wes von Papineäu]

Stupid fashion accessories

- An Irish comic with an albino python wrapped around his neck was featured in “Lemony Snicket,” a recent movie. Billy Connolly said, “It would go into my hair and moan into my ear. I said it fancies me. He must have mistook me for a woman, with my hair and all. He thought I was a bearded lady.” [*Irish Examiner*, Cork, Ireland, January 3, 2005, from Wes von Papineäu]
- A police officer got a huge surprise when he reached into a crashed car to check the driver’s pulse and put his hand on a 3-foot-long live boa constrictor that the deceased was wearing as a “fashion accessory.” Officials later determined the snake played no part in the accident because the autopsy showed no

signs of strangulation. [KPIX, San Francisco, California, January 3, 2005, from Wes von Papineau]

- A so-called “dramatic demonstration” of the need to carry cell phones in the wild happened “when a pair of girls on vacation climbed a hill in Livingston, Montana. . . . A rattlesnake struck at one of their legs. Looking around, they realized they were surrounded by serpents. The hillside was covered in them. . . . The two men who rescued them shot two snakes. . . . Later a rattlesnake trapper reported seeing 25 to 30 snakes in the area. . . .” [Outdoor Life, October 2004, from Alan Rigerman] Reminds me of that On-Star commercial “We were surrounded by them!”

- “After a long day in Jaipur, India,” wrote a tourist to *Fromme’s Budget Travel Magazine*, September 2004, “we returned to our hotel. . . . Hot and tired, my wife quickly donned her bikini and headed for the pool, where she prepared to nap. Almost immediately, a roving entertainer arrived carrying two burlap bags. He sat down cross-legged . . . removed his musical instrument [from one bag] and dumped out . . . six cobras [from the other]. My wife dashed through the garden, the adjacent boutique, and back to our room in record time. The snake charmer and I were the only ones amused.” [from Alan Rigerman] Until now, dear writer, until now.

Fangs a lot, dad

Certain select young men in a small town in Italy collect snakes for an annual snake festival. Their position, called “serpari” is considered to be a great honor and is passed from father to son. [Life, October 8, 2004, from Alan Rigerman] The article doesn’t say if this generation’s recipients are happy about their hereditary task, but with the growing popularity of reptiles and amphibians as pets, it can’t be too bad.

Waves generate attention

After September hurricanes in the American south released a 14-foot, half-ton American alligator named “Chucky” from an Alabama zoo, others have looked at crocodile and alligator enclosures in a new light. “If they think Chucky looked bad,” said an ecologist with the University of Florida, “wait, until they get a load of these man-eaters [Nile crocodiles housed in pits at] the Seaquarium. They’ve got a four-foot-tall retaining wall holding these babies in there, and during [Hurricane] Andrew a six-foot wave washed across Key Biscayne. What does that tell you?” Seaquarium officials said the enclosures were just fine. [Miami NewTimes, November 18 to 24, 2004, from Alan Rigerman]

Great advice

“When in the Komodo area, be careful what you wish for. . . . Had I been informed earlier that an *ora* [local name for Komodo dragon] can outrun any human and is, for a short distance, as fast as a cheetah, I would certainly have had second thoughts. . . . I had merely asked the guide if we could see the dragon in action so we could take a few pictures. Big mistake. . . . The sleepy dragon went through an instant metamorphosis into a lightning-fast monster from a science-fiction movie, its long clawed feet moving it across the ground at

Olympic-record speed. . . . I was running . . . so was my wife. And our guide wasn’t far behind, all of us heading for the ladder to a rough-hewn timber platform a few yards high. Chasing us was a beast that time forgot to extinguish — a 9-foot-long, hungry, carnivorous Komodo dragon that would have liked us to come over for dinner — his!” The writer said the dragon stayed on the ground below the platform for a half an hour “flicking its enormously long, forked tongue, glaring at us and occasionally hissing and exhaling clouds of breath that smelled foul enough to scour barnacles off a submarine. . . .” None of the other dragons they saw on their walk chased them, but he finished with heartfelt “This had certainly been Adventure travel with a capital ‘A.’” [Chicago Tribune, December 12, 2004, from Ray Boldt]

On the road again

Middle of February, Ken and I are headed down to San Diego to give a “herps I have known” talk to their herp society, visit the Zoo and drop in on Bob Applegate’s emporium of herps. I expect over the next couple of years to visit much of the U.S., traveling with copies of my book “Frogs!” due out from Firefly Books in Toronto, Canada, in October of this year. Do drop me an email if you’d like me to attend your meeting or visit a facility or store. My address is ebeltz@ebeltz.net. He must have been reading my mind, but Paul Breese practically sent me instructions on how to get to his house near the only American king’s birthplace with a note that suggested I come back, see the honu again and drop in! I might just.

Thanks to everyone who contributed this month and to Jack Schoenfelder, Donna Moe and Ray Boldt for the State Amphibian and Reptile totals, Bill Burnett, Ray Boldt, and Paul Breese who sent me stuff which is still in my folder for next month. You can contribute too! Take whole sheets of newspapers and magazines, fold a minimum number of times, stuff in the biggest envelope you can recycle and mail to: Ellin Beltz, POB 1125, Ferndale, CA 95536-1125. Wait 30–60 days lead time — and there you are!



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Unofficial Minutes of the CHS Board Meeting, January 14, 2005

Lori King called the meeting to order at 7:40 P.M. Board members Ron Humbert, Linda Malawy and Jenny Vollman were absent.

Officers' Reports

Recording Secretary: Melanie Aspan read the minutes of the December 17 board meeting. Corrections were made and the minutes were accepted.

Treasurer: Jim Hoffman presented the December balance sheet and noted a net income of \$1443.53 for 2004. Jim also mentioned that the AV equipment expense will appear on the 2005 statement.

Membership Secretary: Steve Spitzer announced the membership count at 663. Dottie Humbert inquired about the availability of an easily-perused membership list. Steve responded that this is not readily available as of this date but hopes to have it available soon.

Corresponding Secretary: Deb Krohn briefly related some of the messages received on the CHS voicemail and the methods she used to distribute them to the appropriate parties.

Publications Secretary: Mike Dloogatch reported he has received a manuscript from a 1998 CHS Grant recipient.

Sergeant-at-arms: As Ron Humbert's proxy, Dottie Humbert expressed that in order to maintain the highest level of order possible at Board Meetings each participant should raise his/her hand and wait for recognition from the chair before expressing an opinion. Dottie also reminded all board members that we are to act as deputies at general meetings to help keep the noise level down.

Committee Reports

ReptileFest: Steve Sullivan presented the official ReptileFest flier with the Zoo Med sponsor information as well as the article run by *Reptiles* magazine on this year's 'Fest. Steve also announced the next 'Fest committee meeting would be February 12 at 10 A.M. at his house.

Library: Steve Sullivan asked for volunteers to help him transport the Esther Lewis Memorial Library back down to his office after general meetings. Melanie Aspan, Sean Bober and Deb Krohn volunteered to assist with this each month.

Short Presentation: January's Illinois Herp will be the common map turtle. The presentation will be made by Ron Humbert. February's Illinois Herp will be the American toad and this presentation will be made by Deb Krohn.

Raffle: A discussion took place regarding a silent auction in conjunction with the raffle. It was decided that the event should continue under the supervision of Jack Schoenfelder.

Grants: Lori King inquired about the final number of grant proposals received for 2005. Mike Dloogatch responded that the number is in excess of 20.

Conservation: Lori King reported that the conservation force supporting the Uta stansburiana spiny-tailed iguana has suffered some losses due to theft, most notably walkie talkies. Guest attendee Dr. Robert Sprackland suggested that perhaps the CHS could

replace the radios. There was some concern over coordinating the brand and durability level of the existing equipment. Lori will check to see if replacements are still needed. Steve Spitzer presented Lori with some literature from the Desert Tortoise Preserve Committee.

Old Business

State Reptile: Congratulations were offered to the newly-elected Illinois State Reptile and Amphibian, the painted turtle and the tiger salamander. Discussion followed about the Illinois Legislature vote necessary to make this official. It is possible that this vote may not take place until May.

Reimbursement for Field Museum Show Parking: This issue is still pending due to lack of information transfer from Jenny to Jim. Steve Spitzer moved that the CHS reimburse at this time those members who are owed this parking money in anticipation of being reimbursed by the Field Museum. Steve Sullivan seconded the motion and it passed with all in favor.

North Park Village: Steve Spitzer reported that no contract has yet been presented for our signature, and this January meeting was not "on the books" upon our arrival.

Esther Lewis Memorial Plaque: Steve Sullivan recommended that this item be ordered with an abrasion-resistant coating. Putting a short biography and a picture of Esther onto the CHS website was discussed and set in motion. Adding a picture to the plaque was also discussed.

New Business

AV Equipment: A thank-you was extended to John Bailey and Jim Hoffman for their efforts in choosing the CHS's fabulous new AV equipment. Steve Sullivan brought up the issues of labeling each piece as CHS property and of securely locking the equipment when it is being stored. Steve volunteered to investigate and follow through on both of these issues.

New Library Cart: Based upon researched prices for this, it was proposed that we ask Brian Jones if it would be possible for him to build a custom cart that would take up the same space as the current cart but would have one additional shelf.

New Insurance Carrier: Linda Malawy has received a quote from an insurance company which would cover unlimited shows, venomous animals at our shows as well as Board of Directors insurance. Lori King covered the conditions under which venomous animals would be allowed to appear: double locked and only approved organizations/individuals at the invitation of the Board. A spirited discussion followed regarding having venomous animals on site for educational purposes with proponents on both sides of the issue.

T-shirt Sales: Lori King reported that Linda Malawy is looking for someone to take over this duty. Deb Krohn volunteered.

Round Table

Steve Spitzer revealed that the 2005 Salamander Safari at Plum Creek Nature Center has been set for Saturday, March 26.

The meeting was adjourned at 10:13 P.M.

Respectfully submitted by Melanie Aspan, Recording Secretary.

Herpetology 2005

In this column the editorial staff presents short abstracts of herpetological articles we have found of interest. This is not an attempt to summarize all of the research papers being published; it is an attempt to increase the reader's awareness of what herpetologists have been doing and publishing. The editor assumes full responsibility for any errors or misleading statements.

SEX OF HATCHLING TURTLES

N. Valenzuela et al. [2004, Copeia 2004(4):735-742] note that identifying sex of hatchling turtles is difficult because juveniles are not obviously externally dimorphic, and current techniques of sex identification are often logistically unfeasible for field studies. The authors demonstrate a widely applicable and inexpensive alternative to detect subtle but significant sexual dimorphism in hatchlings, using landmark-based geometric morphometric methods. With this approach, carapace landmarks were digitized from photographs of each hatchling, and shape variables were generated after variation in size, location and orientation were eliminated. These variables were then analyzed for sexual dimorphism, and used in discriminant function analysis to estimate sex of each hatchling. Using this approach on two species (*Chrysemys picta* and *Podocnemis expansa*), showed high accuracy in assigning sex when compared with true sex (98% and 90%, respectively), and cross-validation revealed a correct classification rate of 85%. These correct classification rates were considerably higher than those found on the same species using linear distance measurements as data. The authors also explored two alternative statistical approaches for assessing sex (K-means clustering and multiple logistic regression) and found that these alternative approaches were accurate only 61% and 78% of the time, respectively, in *C. picta* and 69% and 77% of the time in *P. expansa*. These findings are similar to classification rates found for turtle species using approaches based on linear distance measurements. The observed sexual dimorphism differed between the two species. In *P. expansa*, males displayed relatively more expansion of the central region of the carapace relative to females, whereas in *C. picta* this pattern was reversed. The authors conclude that discriminant analysis of morphology quantified using geometric morphometrics provides researchers with a powerful tool to discriminate between male and female hatchling turtles.

VISUAL DISPLAYS IN AMAZONIAN TREEFROGS

A. Amézquita and W. Hödl [2004, Herpetologica 60(4):420-429] performed intrusion experiments and observed the course of 13 male-male agonistic interactions to gather information on the communicative role of visual signaling in the Amazonian treefrog *Hyla parviceps*. To obtain information on the ecological context potentially associated with visual signaling, the authors performed nightly censuses of calling activity and tested whether males differentially used microhabitats in relation to properties that affect both acoustic and visual communication. Among seven behaviors performed by males, two were visual displays. Foot-flagging displays and advertisement calls were used at a similar rate and at similar distances between interactants. Arm-waving displays were less common and used at a closer range than foot-flagging displays. The analysis of a dyadic transition matrix revealed that foot-

flagging significantly elicited foot-flagging displays by the opponent frog. Furthermore, resident males produced more arm wavings and calls than intruders, although the latter difference was not significant. The authors conclude that male *H. parviceps* respond to intruders by combining advertisement calls and visual displays, and that visual signals may serve functionally as a spacing mechanism. Comparing the properties of perches used by calling males with a random sample of available perches indicates that males prefer perches surrounded by denser and higher vegetation. Furthermore, calling activity occurred during or shortly after heavy rains and coincided with calling activity of several co-occurring species of hylid frogs, which probably decreases the locatability of calling males. The authors suggest that, under these conditions, the simultaneous production of auditory and visual signals may momentarily increase a sender's locatability when a conspecific receiver is detected.

TIGER SALAMANDER GENE POOLS

A. Storfer et al. [2004, Copeia 2004(4):783-796] report that introduction of non-native species and consequent genetic introgression of native taxa is a primary conservation concern, particularly for endangered species. Ongoing molecular study of the endangered Sonora tiger salamander, *Ambystoma tigrinum stebbinsi* (Lowe), has uncovered evidence of introgression by the barred tiger salamander, *Ambystoma tigrinum mavortium*. The authors conducted both mitochondrial DNA sequencing and analyses of nine microsatellite loci to (1) evaluate the distinctiveness of *A. t. stebbinsi* from the two other tiger salamander subspecies in Arizona; and (2) test for introgression in *A. t. stebbinsi*. Two mitochondrial haplotypes were found. One was undescribed for tiger salamanders, and the other was identical to that found in nearby *A. t. mavortium*. Microsatellite analyses, including assignment tests, diagnostic alleles, and high genetic distances, supported distinctness of *A. t. stebbinsi*. Thirty-nine animals that were putatively *A. t. stebbinsi* had mtDNA haplotypes identical to those in *A. t. mavortium*. These 39 individuals were distributed among six ponds, where a total of 73 individuals were sampled for microsatellites and considered "unknowns" because of the shared haplotype with *A. t. mavortium*. Assignment tests and diagnostic alleles of microsatellite data indicated that five of these 73 individuals may be hybrids of *A. t. mavortium* and *A. t. stebbinsi*. Some salamanders within the geographic range of *A. t. stebbinsi* were morphologically similar to *A. t. mavortium* or intermediate between the two subspecies. These results suggest that introgression from introduced *A. t. mavortium* may be altering the gene pool of *A. t. stebbinsi*, thereby raising concerns about continued management of this endangered species.

Advertisements

For sale: rats and mice—pinkies, fuzzies and adults. Quantity discounts. Please send a SASE for pricelist or call Bill Brant, *THE GOURMET RODENT*, 6115 SW 137th Avenue, Archer FL 32618, (352) 495-9024, E-mail: GrmtRodent@aol.com.

For sale: from **The Mouse Factory**, producing superior quality, frozen feeder mice and rats. We feed our colony a nutritionally balanced diet of rodent chow, formulated especially for us, and four types of natural whole grains and seeds. Mice starting from: pinks, \$.17 each; fuzzies, \$.24 each; hoppers, \$.30 each; weanling, \$.42; adult, \$.48. Rats: starting with pinks at \$.45 each, to XL at \$1.80 each. Discount prices available. We accept Visa, MC, Discover or money orders. PO Box 85, Alpine TX 79831. Call **toll-free** at (800) 720-0076 or visit our website: < <http://www.themousefactory.com>> .

For sale: **high quality frozen feeders**. Over a decade of production and supply. Seven sizes of mice available: small newborn pinks up to jumbo adults. Prices start at \$25 per 100. Feeders are separate in the resealable bag, not frozen together. Low shipping rates. Free price list. Kelly Haller, 4236 SE 25th Street, Topeka KS 66605, (913) 234-3358 evenings and weekends.

For sale: herp books. *Australia's North—A Natural History of Australia*, Vol. 3 by Stanley and Kay Breeden, 1975, large format, 208 pp., with many excellent color and b&w photos, an outstanding account of the wildlife of the Top End (Kakadu) including photos (some full-page) of many reptiles (e.g., frill-necked lizard, Mertens' water monitor and olive python), hardbound, DJ, \$35; *Australian Reptiles in Colour* by Harold Cogger; 1967; 112 pp., 50 excellent color photos of reptiles in their natural habitat, hardbound, somewhat tattered DJ, \$15; *Some Common Snakes and Lizards of Australia* by David McPhee, 1963 (1959), 125 pp., many b&w photos, spine slightly scuffed, softbound, \$26; *The Last of the Ruling Reptiles* by Wilfred T. Neil, 1971; 486 pp., 162 figs (b&w photos, range maps), a comprehensive reference on world's 22 species of crocodilians, hardbound, DJ, \$75. All books in excellent condition except as noted. Orders for \$25 or more sent postpaid; \$2.50 postage and handling for orders under \$25. Send e-mail address for complete book list. William R. Turner, 7395 S. Downing Circle W., Littleton, CO 80122; telephone (303) 795-5128; e-mail: toursbyturner@aol.com.

For sale: **New book**—*Snakes of Costa Rica* by Alejandro Solórzano, in English/Spanish, 842 color photos, 21 figs. & tables, distribution maps for all species, a must for anyone with an interest in tropical snakes, \$60 + \$5 shipping & handling. Also available, *Biology of the Vipers* (2002, Schuett et al., eds.) Order from Eagle Mountain Publishing, LC, 7705 N. Wyatt Earp Ave., Eagle Mountain UT 84043, (801) 789-4149 tel., (801) 789-4150 fax. E-mail: empub@msn.com. For additional information see www.eaglemountainpublishing.com

For sale: Now accepting reservations for rare and unusual garters—**Eastern**: normal \$25 each/2 for \$40, Florida \$25 each/2 for \$40, silver hets/possible het granite \$75, granites (axanthic) \$150, granite hets \$75, albinos \$195–\$250, hets \$95, possible hets \$45, flame × albino \$125, erythristic × albino \$125, flames \$100, erythristic \$100, melanistic \$35, snows \$395; **Red-sided**: normals \$25 each/2 for \$40, albinos \$375, het and possible het albino— inquire, double het snow \$225 pair, anerythristic \$100, het anerythristic \$50; **Plains**: normal \$25 each/2 for \$40, anerythristic \$40, double het snow \$50, albino (Nebraska albino × red Iowa albino) ?, axanthic \$95, albinos/snows market, quad hets \$75, red albino \$125, red albino hets \$40, Christmas albino \$125, super Christmas albino \$175, hybino \$195, possible het hybino \$35, piebald inquire; **Wandering**: normals \$25 each/2 for \$40, chocolate \$75, melanistics \$95, chocolate × melanistic \$45 each, albinos \$150, het albinos \$50; **California red-sided** \$125, **Eastern black-necked** \$95, **Florida blue-striped (similis)** \$40, **Santa Cruz** \$60. Scott Felzer, (919) 365-6120 EST. E-mail: sfelzersgarters@bellsouth.net www.gartersnakemorphs.com

For sale: c.b. '03 yellow anacondas, aggressive feeders, perfect health, about 2' long, \$100 each; also c.b. '04 reticulated pythons; beautiful hatchlings already feeding on adult mice. These guys are tiger siblings and are available for \$100/each as well. Personal checks, money orders and Paypal accepted. Out of state shipping available. If you have questions or would like to purchase an animal call Mark Petros, (847) 836-9426 or E-mail ballpython777@yahoo.com.

Herp Tours: Herp Belize! A field trip in search of reptiles and amphibians through some of the most unspoiled places left on earth. Dry season, March 15–24 (reptile focus). Wet season, July 1–10 (amphibian focus). Led by professional herpetologists. Hiking, canoeing, 4×4, boating. Photographic opportunities. Herp in diverse habitats. All inclusive. Catered meals and ice cold drinks. Limited availability. Full day snorkeling on barrier reef. For inquiries and reservations call 011-501-614-3896 (Belize). Email: bfree@direcway.com.

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Reptile Show: Captive-bred only. Monona Community Center, 1011 Nichols Road, Madison WI. Saturday, April 23, 2005, 10 A.M. to 4 P.M., \$4 admission, \$2 under 12. Vendors tables, \$25. Info: wireptileshows@hotmail.com or (608) 238-2891

Wanted: Female ball pythons, adults preferred but smaller animals also considered. I am a professional breeder specializing in ball pythons and I can assure you that your animal will be provided with excellent care and optimal living conditions. Mark Petros, (847) 836-9426; ballpython777@yahoo.com.

Wanted: I'm looking for my soulmate. I want to settle down to a family before it is too late. But I have this problem. . . . When we get into hobbies and interests: old popular records, jazz and show tunes, and antique electronics are fine, but when I mention turtles, "What, are you crazy?" So maybe this is a better place to look. Please don't try to separate me from my turtles—at least not most of them. If interested, please drop a line to Ellis Jones, 1000 Dell, Northbrook IL 60062, telling a bit about yourself and giving a phone number.

Line ads in this publication are run free for CHS members — \$2 per line for nonmembers. Any ad may be refused at the discretion of the Editor. Submit ads to: Michael Dloogatch, 6048 N. Lawndale Avenue, Chicago IL 60659, (773) 588-0728 evening telephone, (312) 782-2868 fax, E-mail: MADadder0@aol.com.

ReptileFest is coming soon and you are invited to be part of the fun! Exhibits by CHS members are the backbone of 'Fest and are a great opportunity for you to share your herpetological knowledge.

The mission of ReptileFest is to educate that herps are good neighbors, both as pets and in the wild; to promote principles of conservation and husbandry; to promote the CHS as a worthwhile group; to give members an opportunity to have fun and grow; and to gain members.

Any exhibit that incorporates these goals has a place at ReptileFest. Some ideas for exhibits include: unique adaptations or morphology, captive color morphs, natural variation, related species, best beginner herps or interesting advanced herps.

If you don't have an animal to bring, or even if you do, consider creating an educational poster. Possible topics might be: What is a herp?; venomous U.S. herps; anatomy; reproduction; herp housing; jobs in herpetology; myths and facts; food and feeding; or herp trivia.

Exhibit at ReptileFest and win prizes from ZooMed



Use your imagination to come up with interesting, educational, and attractive displays. All exhibitors at ReptileFest will be eligible to win prizes from ZooMed laboratories worth up to \$100. Prizes will be awarded for the best display in three categories:

- Best first-time exhibitor: This category is open to anyone who is exhibiting at ReptileFest for the first time.
- People's choice: This category is open to all exhibitors and will be voted on by our visitors.
- Exhibitors' choice: This category is also open to all visitors but is voted on only by other exhibitors.

Details will be posted at ReptileFest.com. If you would like to discuss potential exhibit ideas, or just want to help out at 'Fest, email reptilefest@gmail.com

The Chicago Herpetological Society Presents



The 12th
Annual

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The Nation's Largest Educational
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- no animals for sale -

**www.ReptileFest.com
has coupons and more info**

UPCOMING MEETINGS

The next meeting of the Chicago Herpetological Society will be held at 7:30 P.M., Wednesday, February 23, at the Peggy Notebaert Nature Museum, Cannon Drive and Fullerton Parkway, in Chicago. **Nathaniel J. Dominy, Ph.D**, Professor of Anthropology at the University of California–Santa Cruz, will speak on “The Sensory Biology of Reptiles.” Although Dr. Dominy’s research emphasizes the sensory ecology of primates, he has a broad interest in the sensory biology of reptiles, particularly their visual systems. The visual system of reptiles differs quite remarkably from our own because reptiles have four instead of three photopigments in the cone cells of the retina. The talk will focus on how reptiles use vision and color in an ecological context, from foraging to sexual signaling.

Speaking at the March 30 meeting will be **Rebecca Christoffel**, a doctoral candidate in the Department of Fisheries and Wildlife at Michigan State University. Rebecca, who received a CHS grant in 2003, will describe her public education and outreach efforts in southeast Michigan: “Learning to Live with the Eastern Massasauga Rattlesnake.”

The regular monthly meetings of the Chicago Herpetological Society take place at Chicago’s newest museum — the **Peggy Notebaert Nature Museum**. This beautiful new building is at Fullerton Parkway and Cannon Drive, directly across Fullerton from the Lincoln Park Zoo. Meetings are held the last Wednesday of each month, from 7:30 P.M. through 9:30 P.M. Parking is free on Cannon Drive. A plethora of CTA buses stop nearby.

Board of Directors Meeting

Are you interested in how the decisions are made that determine how the Chicago Herpetological Society runs? And would you like to have input into those decisions? If so, mark your calendar for the March 18 board meeting, to be held at the North Park Village Administration Building, 5801 North Pulaski Road, Chicago. To get there take the Edens Expressway, I-94, and exit at Peterson eastbound. Go a mile east to Pulaski, turn right and go south to the first traffic light. Turn left at the light into the North Park Village complex. At the entrance is a stop sign and a guardhouse. When you come to a second stop sign, the administration building is the large building ahead and to your left. There is a free parking lot to the left and behind the building.

The Chicago Turtle Club

The monthly meetings of the Chicago Turtle Club are informal; questions, children and animals are welcome. Meetings normally take place at the North Park Village Nature Center, 5801 N. Pulaski, in Chicago. Parking is free. For more info call Lisa Koester, (773) 508-0034, or visit the CTC website: <http://www.geocities.com/~chicagoturtle>.

HERP OF THE MONTH

Each monthly meeting will showcase a different herp. CHS members are urged to bring one specimen of the “Herp of the Month” to be judged against the entries from other CHS members. Prizes will be awarded to the top three winners as follows: 1st place—6 raffle tickets at next meeting; 2nd place—4 raffle tickets at next meeting; 3rd place—2 raffle tickets at next meeting. Here are the categories for the next two months: February—Geckos; March—bearded dragons.

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